

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-12 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. **Claims 9-12** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. **Claims 9-12** contains the trademark/trade name "DD/DD+", "DTS-HD", "DD/MLP", and/or "DD(AC-3)". Where a trademark or trade name is used in a claim as a limitation to identify or describe a particular material or product, the claim does not comply with the requirements of 35 U.S.C. 112, second paragraph. See *Ex parte Simpson*, 218 USPQ 1020 (Bd. App. 1982). The claim scope is uncertain since the trademark or trade name cannot be used properly to identify any particular material or product. A trademark or trade name is used to identify a source of goods, and not the goods themselves. Thus, a trademark or trade name does not identify or describe the goods associated with the trademark or trade name. In the present case, the trademark/trade

name is used to identify/describe "the target audio stream" and, accordingly, the identification/description is indefinite.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claims 1 and 4-9** are rejected under 35 U.S.C. 103(a) as being unpatentable over Weaver et al. (hereinafter Weaver), US 2004/0128402 A1, further in view of Fielder et al. (hereinafter Fielder), "Introduction to Dolby Digital Plus, an Enhancement to the Dolby Digital Coding System", AES Convention Paper 6196 presented at the 117th AES Convention on October 28-31, 2004.

7. Regarding **claim 1**, Weaver teaches a reproduction apparatus comprising:

a selecting unit operable to make a judgment on which among a plurality of predetermined conditions are satisfied by each of a plurality of audio streams (see Weaver, ¶ 0021, 0024, and 0038-0045, figure 1, units 102, 106, and figure 2, units 206 and 226), and to select an audio stream to be reproduced among the plurality of audio streams (see Weaver, ¶ 0024, 0029-0032), in accordance with each combination of predetermined conditions satisfied by each audio stream (see Weaver, ¶ 0033-0040 and figure 2, units 216 and 236); and

a reproducing unit operable to reproduce the selected audio stream (see Weaver, figure 1, unit 106), wherein

one of the plurality of predetermined conditions is that a channel attribute of an audio stream is surround and a surround output is available (see Weaver, ¶ 0029, 0031, figures 5-7, and table 1), and

...

Weaver teaches a reproduction apparatus comprising the above features, wherein they teach a reproduction apparatus that is capable of testing playback modes of an audio stream, such as that reproduced from a DVD (see Weaver, ¶ 0002-0006 and 0041-0045). Weaver teaches that "the predetermined conditions" are stored in a feature registry (see Weaver, ¶ 0022), wherein the predetermined conditions can be determined by reading header information (see Weaver, ¶ 0038-0045) or probing the device for supported modes (see Weaver, ¶ 0026-0031). Weaver teaches reading header information to determine how it can be reproduced, or to judge if it can be reproduced, wherein it is clear that an optimal or a best sub-optimal mode is chosen for playback (see Weaver, ¶ 0032 and 0038-0039). Weaver does not explicitly teach extended data, wherein extended data is interpreted to be a dependent stream that augments the basic data (i.e. it is supplemental data that can be combined with basic data to create surround audio).

Fielder teaches an introduction to Dolby Digital Plus and an enhancement to Dolby Digital coding system (see Fielder, abstract and p. 1, section "1. Introduction"). Fielder teaches that an enhanced Dolby Digital stream (E-AC-3) can support more channels than the typical 5.1 surround system (5 audio

channels and 1 low-frequency effect channel) (see Fielder, p. 2, section "1.1. Increased Flexibility"). Specifically, Fielder teaches a dependent substream (reads on extended data) to extend a 5.1 surround signal to a 7.1 surround signal (see Fielder, pp. 19-20, section "5.1. Increased Channel and Program Carriage"). One of ordinary skill in the art at the time of the invention would have found it obvious to use extended data to create larger surround programs for an enhanced multimedia experience (see Fielder, p. 2, section "1.1. Increased Flexibility"). It would have been obvious at the time of the invention for one of ordinary skill in the art to combine Weaver and Fielder for the purpose of creating an enhanced multimedia experience.

8. Regarding **claim 4**, see the preceding rejection with respect to claim 1. The combination teaches the reproduction apparatus of claim 1, wherein

the detection of whether or not the extended data is capable to be processed is accomplished by checking whether or not either the reproduction apparatus or a device connected to the reproduction apparatus has a capability to decode the extended data (see Weaver, ¶ 0031, wherein it is implied that not only a stereo mode will be checked, but a mono and surround if an audio signal source with a mono or surround property to be reproduced exists).

In the combination, Weaver teaches the detection of capabilities and checking to see if the reproduction apparatus has the capabilities to decode the data. Fielder teaches extended data by virtue of the dependent streams in the E-AC-3 stream, and it would be obvious for a reproduction device to announce the capability of decoding the E-AC-3 stream so that it can be detected and checked according to the teachings of Weaver.

9. Regarding **claim 5**, see the preceding rejection with respect to claim 1.

The combination teaches the reproduction apparatus of claim 1, wherein

the detection of whether or not the extended data is capable to be processed is accomplished by checking whether or not it is capable to transmit either the extended data that has been compressed or non-compressed digital data that has been obtained by decoding the extended data, to a connected device (see Weaver, ¶¶ 0017-0020, 0029-0030 and figures 5-7 and Fielder, pp. 1, 2, and 19-20).

In the combination, Fielder teaches a dependent stream, which reads on the extended data, and Weaver teaches detection of capabilities. In a combination of these teachings, it would be obvious that the capability extends to describe both compressed and non-compressed transmission between any of the devices (see Weaver, ¶¶ 0020, and figure 1, units 102, 104, 106, 108, 112, and 118). One of ordinary skill in the art at the time of the invention would have found it obvious to send either compressed or non-compressed digital data to the audio/video receiver (Weaver, unit 106) based on detected capabilities (see Weaver, figure 6 and ¶¶ 0029, wherein AC-3 is compressed and is interchangeably referred to as "Dolby 5.1" based on, at least, teachings in Fielder).

10. Regarding **claim 6** see the preceding rejection with respect to claim 1.

The combination teaches the reproduction apparatus of claim 1, wherein

the detection of whether or not the extended data is capable to be processed is accomplished by checking whether or not a speaker of a connected device supports surround audio (see Weaver, ¶¶ 0031, wherein it is implied that not only a stereo mode will be checked, but a mono and surround if an audio signal source with a mono or surround property to be reproduced exists).

In the combination, Weaver teaches the detection of capabilities and checking to see if the reproduction apparatus has the capabilities to decode the data. Fielder teaches extended data by virtue of the dependent streams in the E-AC-3 stream, and it would be obvious for a reproduction device to announce the desired format (i.e. 7.1 surround) and check to see if the number of speakers support the reproduction in a manner that can be detected and checked according to the teachings of Weaver.

11. Regarding **claim 7**, Weaver teaches a non-transitory computer readable medium storing a program that causes a computer to execute the steps of:

making a judgment on which among a plurality of predetermined conditions are satisfied by each of a plurality of audio streams, and selecting an audio stream to be reproduced among the plurality of audio streams, in accordance with each combination of predetermined conditions satisfied by each audio stream (see Weaver, ¶ 0021, 0024, and 0029-0045, figure 1, units 102, 106, and figure 2, units 206 and 226); and

reproducing the selected audio stream, wherein one of the plurality of predetermined conditions is that a channel attribute of an audio stream is surround and a surround output is available (see Weaver, ¶ 0029, 0031, figures 5-7, and table 1), and

if an audio frame of a target audio stream is composed of basic data and extended data, the audio stream selecting step judges whether or not the predetermined condition is satisfied by detecting whether or not a channel attribute of the extended data is surround and the extended data is capable to be processed (see Weaver, ¶ 0029-0045, table 1, and figures 5-7 and Fielder, pp. 1, 2, and 19-20).

12. Regarding **claim 8**, Weaver teaches a reproduction method comprising the steps of:

making a judgment on which among a plurality of predetermined conditions are satisfied by each of a plurality of audio streams, and selecting an audio stream to be reproduced among the plurality of audio streams, in accordance with each combination of predetermined conditions satisfied by each audio stream (see Weaver, ¶ 0021, 0024, and 0029-0045, figure 1, units 102, 106, and figure 2, units 206 and 226); and reproducing the selected audio stream, wherein

one of the plurality of predetermined conditions is that a channel attribute of an audio stream is surround and a surround output is available (see Weaver, ¶ 0029, 0031, figures 5-7, and table 1), and

if an audio frame of a target audio stream is composed of basic data and extended data, the audio stream selecting step judges whether or not the predetermined condition is satisfied by detecting whether or not a channel attribute of the extended data is surround and the extended data is capable to be processed (see Weaver, ¶ 0029-0045, table 1, and figures 5-7 and Fielder, pp. 1, 2, and 19-20).

13. Regarding **claim 9**, see the preceding rejection with respect to claim 1.

The combination teaches the reproduction apparatus of claim 1, wherein

an encoding method of the target audio stream is DD/DD+, and the basic data of the audio frame is an independent substream and the extended data of the audio frame is a dependent stream (see Weaver, ¶ 0020, wherein AC-3 is equivalent to Dolby Digital (DD) and see Fielder, pp. 1, 2, and 19-20).

14. **Claims 2 and 3** are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Weaver and Fielder as applied to claim 1 above, and further in view of Solari, US 5,333,276 A.

15. Regarding **claim 2**, see the preceding rejection with respect to claim 1.

The combination of Weaver and Fielder teaches the reproduction apparatus of claim 1, wherein a feature registry stores supported encoding methods, or the capabilities of the connected devices (see Weaver, figures 5-7, and ¶ 0030-0038). Weaver does not specifically teach the feature registry as embodied at least in part by a status register, such that Weaver does not specifically teach the reproduction apparatus of claim 1, further comprising:

a status register that stores a first flag group, which corresponds to basic data of a plurality of encoding methods, and a second flag group which corresponds to extended data of the plurality of encoding methods, wherein the first flag group is composed of a plurality of

flags that indicate, for each of the plurality of encoding methods, whether or not the reproduction apparatus has a capability to process the basic data, the second flag group is composed of a plurality of flags that indicate, for each of the plurality of encoding methods, whether or not the reproduction apparatus has a capability to process the extended data, and the detection of whether or not the extended data is capable to be processed is accomplished by checking whether or not a value set in a flag, which belongs to the first flag group and corresponds to the target audio stream, is a predetermined value.

Solari teaches flag fields for indicating the status of registers used in a data transferring scheme (see abstract and column 6, line 34 - column 7, line 5). Solari's teachings of status flags would be appreciated by one of ordinary skill in the art at the time of the invention for the purpose of providing a method of implementing the feature registry as taught by Weaver. It would have been obvious at the time of the invention for one of ordinary skill in the art to combine Weaver, Fielder and Solari for the purpose of creating a working embodiment of the feature registry.

16. Regarding **claim 3**, see the preceding rejection with respect to claim 2.

Weaver teaches the reproduction apparatus of claim 2, wherein

*the capability to process the extended data is categorized into three levels referred to as a first level, a second level, and a third level,
wherein at the first level, it is capable to decode the extended data and output a result of the decoding as a surround output;
at the second level, it is capable to decode the extended data and output a result of the decoding as a stereo output; and
at the third level, neither a surround output nor a stereo output is available, and the predetermined value is a value indicating the first level (see Weaver, ¶ 0029, and figure 6, wherein the first level is surround, the second is stereo, and the third is mono and)*

It is obvious in the combination that a sub-optimal mode exists wherein the extended data taught by Fielder, pp. 19-20, can be decoded but the speakers attached to the audio/video receiver, 106, of Weaver are not present.

In the preceding sub-optimal mode, it is obvious that the capabilities of the audio/video receiver are detected and the appropriate data is reproduced. Fielder also makes obvious downmixing for the purpose of providing playback on less than the optimal number of speakers (e.g. 5.1 surround playback on 2 speakers in stereo) (see Fielder, pp. 2 and 4-6, sections 3-3.1.2).

17. **Claims 10-12** are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Weaver and Fielder as applied to claim 1 above, and further in view of Mesarovic et al. (hereinafter Mesarovic), US 2006/0013077 A1, and Thomson, "DTD Unveils DTS-HD Brand for High Definition Media Formats".

18. Regarding **claim 10**, see the preceding rejection with respect to claim 1. The combination of Weaver and Fielder teaches the reproduction apparatus of claim 1, wherein the basic data of the audio frame is a core substream and the extended data of the audio frame is an extension substream (see Fielder, pp. 19-20). However, the combination does not teach the encoding method of DTS-HD.

Mesarovic teaches an audio-video system with specific audio format modules (see Mesarovic, abstract, ¶ 0013, 0037 and figure 4, unit 402). Specifically, Mesarovic teaches an A/V system that can support a variety of formats including DTS (see Mesarovic, ¶ 0027 and 0037). It would have been obvious at the time of the invention for one of ordinary skill in the art to combine

Weaver, Fielder, and Mesarovic for the purpose of supporting popular media codecs. However, the combination does not teach DTS-HD.

Thomson teaches that Digital Theater Systems, Inc. has renamed DTS++ to DTS-HD and intends to market the product as a lossless high fidelity product along side its other DTS formats (see Thomson, p. 1). Weaver teaches upgrading the system through maintenance upgrades to support previously unsupported formats. It would have been obvious at the time of the invention for one of ordinary skill in the art to combine Weaver, Fielder, Mesarovic, and Thomson for the purpose of supporting a wide array of formats that a user would encounter and want to reproduce on a home audio/visual system.

19. Regarding **claim 11**, see the preceding rejection with respect to claims 1 and 10. The combination teaches the reproduction apparatus of claim 1, wherein

an encoding method of the target audio stream is DD/MLP, and the basic data of the audio frame is DD(AC-3) data and the extended data of the audio frame is an MLP audio (obvious in view of Fielder, pp. 19-20 and Mesarovic, ¶ 0027).

20. Regarding **claim 12**, see the preceding rejection with respect to claims 1 and 10. The combination teaches the reproduction apparatus of claim 1, wherein

*encoding methods of the target audio stream include DD/DD+, DTS-HD, DD/MLP (see Fielder, pp. 1, 2, and 19-20, see Mesarovic, ¶ 0027, and see Thomson, p. 1);
the basic data of the DD/DD+ is an independent substream and the extended data of the DD/DD+, of the audio frame is a dependent substream (see Fielder, pp. 19-20);
the basic data of the DTS-HD is a core substream and the extended data of the DTS-HD is an extension substream (see Fielder, pp. 19-20 in view of Thomson); and*

the basic data of the DD/MLP is DD(AC-3) data and the extended data of the DD/MLP is an MLP audio (see Fielder, pp. 19-20 in view of Mesarovic, ¶ 0027).

Conclusion

21. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Lindemann et al., US 2004/0223622 A1 (previously cited), teaches a digital wireless loudspeaker system with enabling of different speaker mores (see ¶ 0064-0066);

Imadate, US 2004/0190726 A1 (previously cited), teaches a switching circuit to switch to a quasi-stereo mode when a mono signal is input (see ¶ 0006 and figure 3); and

Thagard et al., US 6,215,737 B1, teaches a multi-channel digital audio with different multiple resolutions for channels or groups of channels (see abstract, column 2, lines 33-67, and figure 1).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANIEL R. SELLERS whose telephone number is (571)272-7528. The examiner can normally be reached on Monday to Friday, 9am to 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian C. Chin can be reached on (571)272-7848. The fax

phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Daniel R. Sellers/
Examiner, Art Unit 2614

/VIVIAN CHIN/
Supervisory Patent Examiner, Art Unit 2614